Full wwPDB X-ray Structure Validation Report (i)

Jul 16, 2024 – 01:06 PM JST

PDB ID	:	8WDS
Title	:	Crystal structure of BF.7 RBD complexed with human ACE2
Authors	:	Li, W.; Xie, Y.
Deposited on	:	2023-09-16
Resolution	:	3.40 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

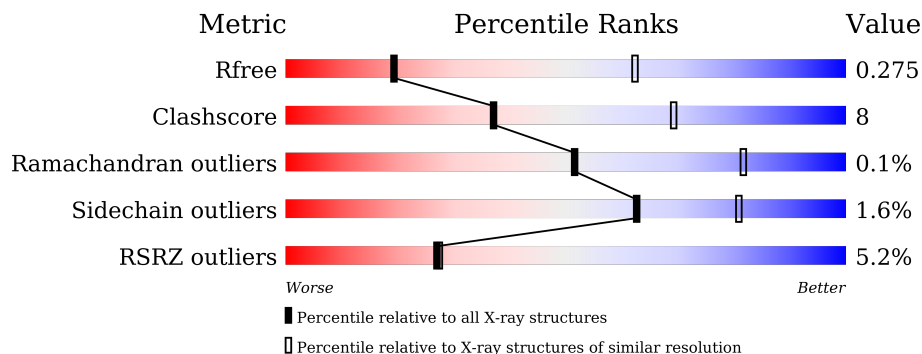|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.

Metric	Percentile Ranks	Value
Rfree		0.275
Clashscore		8
Ramachandran outliers		0.1%
Sidechain outliers		1.6%
RSRZ outliers		5.2%

Worse   Better

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RSRZ outliers	127900	2173 (3.50-3.30)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	805	59% 15% 26%
1	C	805	3% / 59% 15% 26%
2	B	247	10% / 56% 23% 21%
2	D	247	11% / 63% 16% 21%
3	E	2	100%
4	F	3	100%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
6	NAG	B	601	-	-	-	X

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 13009 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Angiotensin-converting enzyme 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	596	Total 4870	C 3116	N 808	O 917	S 29	0	1	0
1	C	596	Total 4857	C 3110	N 801	O 917	S 29	0	1	0

- Molecule 2 is a protein called Spike protein S1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	195	Total 1559	C 1004	N 262	O 285	S 8	0	1	0
2	D	195	Total 1556	C 1003	N 261	O 284	S 8	0	1	0

There are 84 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	301	MET	-	initiating methionine	UNP P0DTC2
B	302	HIS	-	expression tag	UNP P0DTC2
B	303	SER	-	expression tag	UNP P0DTC2
B	304	SER	-	expression tag	UNP P0DTC2
B	305	ALA	-	expression tag	UNP P0DTC2
B	306	LEU	-	expression tag	UNP P0DTC2
B	307	LEU	-	expression tag	UNP P0DTC2
B	308	CYS	-	expression tag	UNP P0DTC2
B	309	CYS	-	expression tag	UNP P0DTC2
B	310	LEU	-	expression tag	UNP P0DTC2
B	311	VAL	-	expression tag	UNP P0DTC2
B	312	LEU	-	expression tag	UNP P0DTC2
B	313	LEU	-	expression tag	UNP P0DTC2
B	314	THR	-	expression tag	UNP P0DTC2
B	315	GLY	-	expression tag	UNP P0DTC2
B	316	VAL	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	317	ARG	-	expression tag	UNP P0DTC2
B	318	ALA	-	expression tag	UNP P0DTC2
B	339	ASP	GLY	variant	UNP P0DTC2
B	346	THR	ARG	variant	UNP P0DTC2
B	371	PHE	SER	variant	UNP P0DTC2
B	373	PRO	SER	variant	UNP P0DTC2
B	375	PHE	SER	variant	UNP P0DTC2
B	376	ALA	THR	variant	UNP P0DTC2
B	405	ASN	ASP	variant	UNP P0DTC2
B	408	SER	ARG	variant	UNP P0DTC2
B	417	ASN	LYS	variant	UNP P0DTC2
B	440	LYS	ASN	variant	UNP P0DTC2
B	452	ARG	LEU	variant	UNP P0DTC2
B	477	ASN	SER	variant	UNP P0DTC2
B	478	LYS	THR	variant	UNP P0DTC2
B	484	ALA	GLU	variant	UNP P0DTC2
B	486	VAL	PHE	variant	UNP P0DTC2
B	498	ARG	GLN	variant	UNP P0DTC2
B	501	TYR	ASN	variant	UNP P0DTC2
B	505	HIS	TYR	variant	UNP P0DTC2
B	542	HIS	-	expression tag	UNP P0DTC2
B	543	HIS	-	expression tag	UNP P0DTC2
B	544	HIS	-	expression tag	UNP P0DTC2
B	545	HIS	-	expression tag	UNP P0DTC2
B	546	HIS	-	expression tag	UNP P0DTC2
B	547	HIS	-	expression tag	UNP P0DTC2
D	301	MET	-	initiating methionine	UNP P0DTC2
D	302	HIS	-	expression tag	UNP P0DTC2
D	303	SER	-	expression tag	UNP P0DTC2
D	304	SER	-	expression tag	UNP P0DTC2
D	305	ALA	-	expression tag	UNP P0DTC2
D	306	LEU	-	expression tag	UNP P0DTC2
D	307	LEU	-	expression tag	UNP P0DTC2
D	308	CYS	-	expression tag	UNP P0DTC2
D	309	CYS	-	expression tag	UNP P0DTC2
D	310	LEU	-	expression tag	UNP P0DTC2
D	311	VAL	-	expression tag	UNP P0DTC2
D	312	LEU	-	expression tag	UNP P0DTC2
D	313	LEU	-	expression tag	UNP P0DTC2
D	314	THR	-	expression tag	UNP P0DTC2
D	315	GLY	-	expression tag	UNP P0DTC2
D	316	VAL	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
D	317	ARG	-	expression tag	UNP P0DTC2
D	318	ALA	-	expression tag	UNP P0DTC2
D	339	ASP	GLY	variant	UNP P0DTC2
D	346	THR	ARG	variant	UNP P0DTC2
D	371	PHE	SER	variant	UNP P0DTC2
D	373	PRO	SER	variant	UNP P0DTC2
D	375	PHE	SER	variant	UNP P0DTC2
D	376	ALA	THR	variant	UNP P0DTC2
D	405	ASN	ASP	variant	UNP P0DTC2
D	408	SER	ARG	variant	UNP P0DTC2
D	417	ASN	LYS	variant	UNP P0DTC2
D	440	LYS	ASN	variant	UNP P0DTC2
D	452	ARG	LEU	variant	UNP P0DTC2
D	477	ASN	SER	variant	UNP P0DTC2
D	478	LYS	THR	variant	UNP P0DTC2
D	484	ALA	GLU	variant	UNP P0DTC2
D	486	VAL	PHE	variant	UNP P0DTC2
D	498	ARG	GLN	variant	UNP P0DTC2
D	501	TYR	ASN	variant	UNP P0DTC2
D	505	HIS	TYR	variant	UNP P0DTC2
D	542	HIS	-	expression tag	UNP P0DTC2
D	543	HIS	-	expression tag	UNP P0DTC2
D	544	HIS	-	expression tag	UNP P0DTC2
D	545	HIS	-	expression tag	UNP P0DTC2
D	546	HIS	-	expression tag	UNP P0DTC2
D	547	HIS	-	expression tag	UNP P0DTC2

- Molecule 3 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
3	E	2	28	16	2	10	0	0	0

- Molecule 4 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
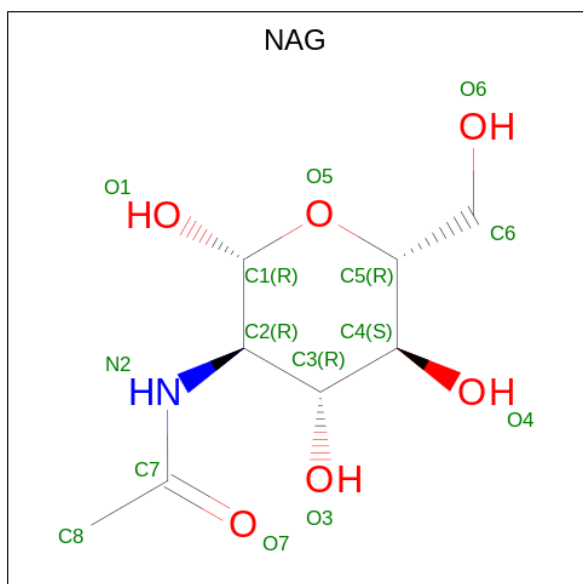
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
4	F	3	Total 39	C 22	N 2	O 15	0	0	0

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total 1	Zn 1	0	0
5	C	1	Total 1	Zn 1	0	0

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total 14	C 8	N 1	O 5	0	0
6	A	1	Total 14	C 8	N 1	O 5	0	0
6	B	1	Total 14	C 8	N 1	O 5	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	C	1	Total	C	N	O	0	0
			14	8	1	5		
6	C	1	Total	C	N	O	0	0
			14	8	1	5		
6	C	1	Total	C	N	O	0	0
			14	8	1	5		
6	C	1	Total	C	N	O	0	0
			14	8	1	5		

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Angiotensin-converting enzyme 2
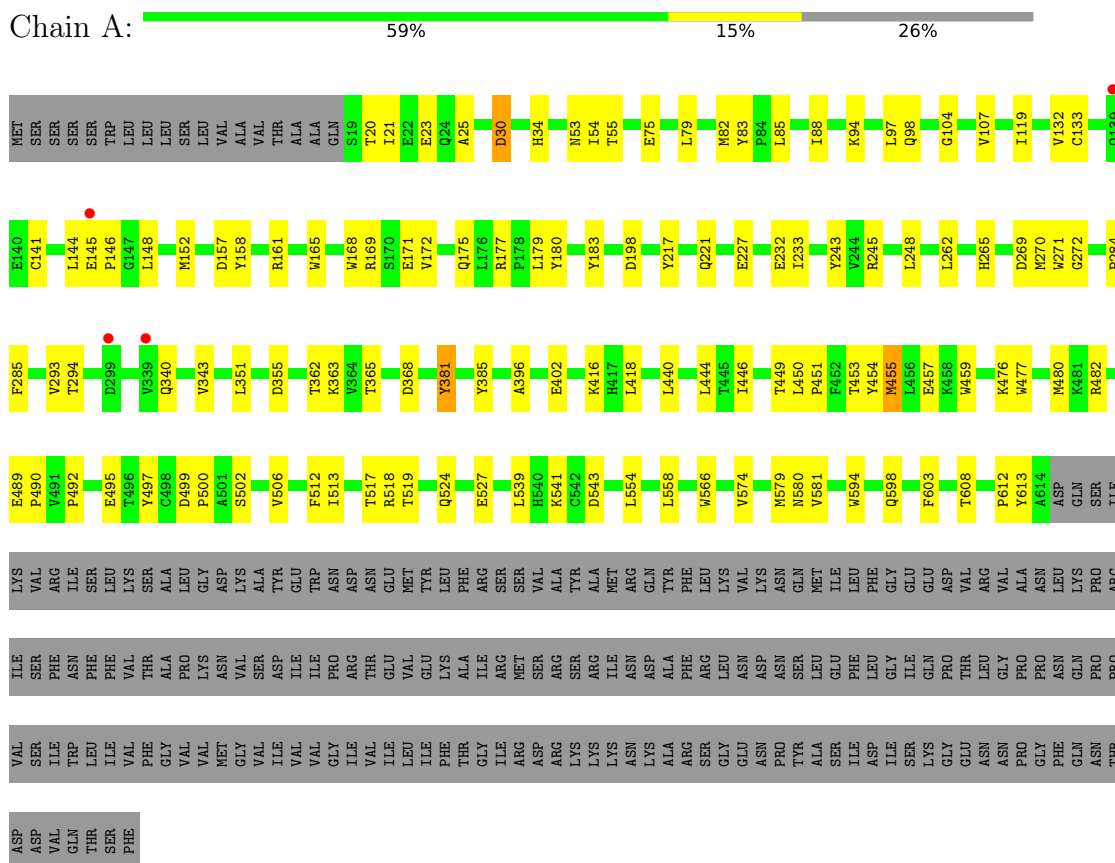
• Molecule 1: Angiotensin-converting enzyme 2

• Molecule 2: Spike protein S1

Chain B:

• Molecule 2: Spike protein S1

Chain D:
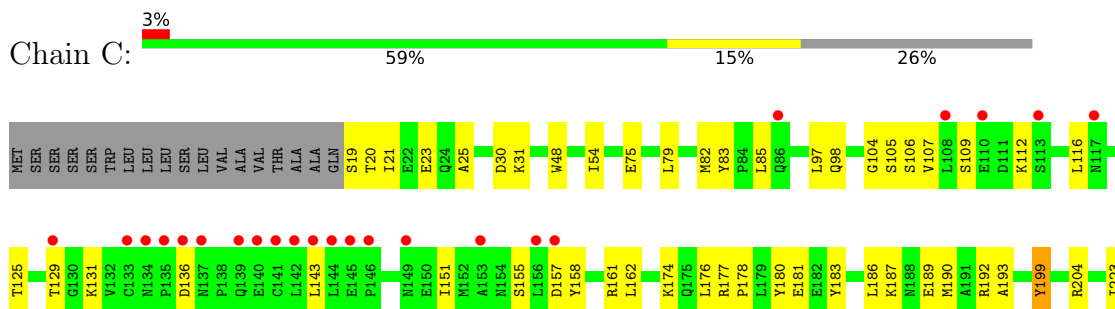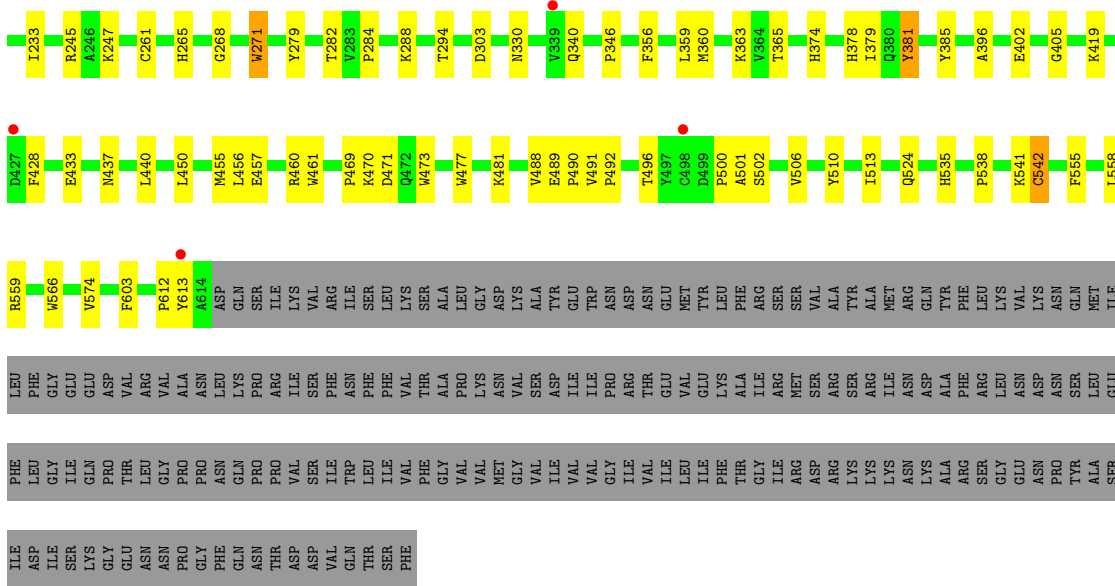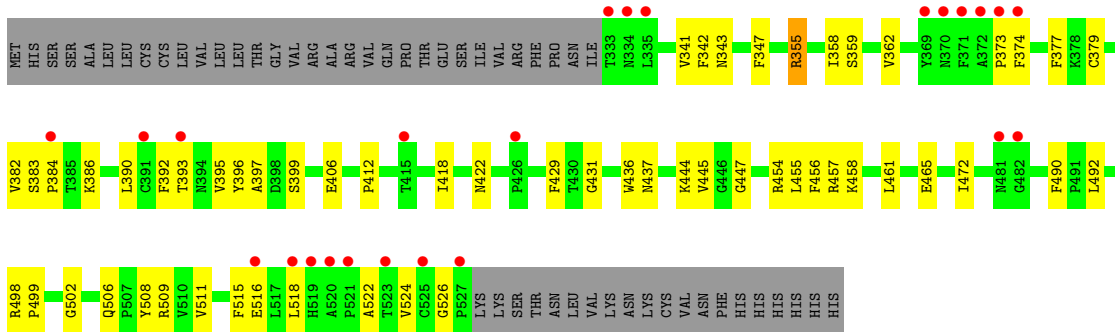
• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain E:

NAG1
NAG2

• Molecule 4: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-ac
etamido-2-deoxy-beta-D-glucopyranose

Chain F:

100%

NAG1
NAG2
BMA3

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 2 21 21	Depositor
Cell constants a, b, c, α, β, γ	122.69Å 137.35Å 154.76Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.42 – 3.40	Depositor
	29.42 – 3.40	EDS
% Data completeness	87.1 (29.42-3.40)	Depositor
(in resolution range)	87.1 (29.42-3.40)	EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.56 (at 3.39Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487, PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.232 , 0.271	Depositor
	0.235 , 0.275	DCC
R_{free} test set	1543 reflections (4.85%)	wwPDB-VP
Wilson B-factor (Å^2)	60.2	Xtriage
Anisotropy	0.106	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.27 , 20.5	EDS
L-test for twinning[2]	$< |L| > = 0.47, < L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.86	EDS
Total number of atoms	13009	wwPDB-VP
Average B, all atoms (Å^2)	66.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.62% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: BMA, ZN, NAG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$|Z|$ >5	RMSZ	#$|Z|$ >5
1	A	0.29	0/5010	0.48	0/6806
1	C	0.30	0/4998	0.48	0/6793
2	B	0.29	0/1606	0.52	0/2188
2	D	0.30	0/1606	0.51	0/2188
All	All	0.29	0/13220	0.49	0/17975

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4870	0	4649	74	0
1	C	4857	0	4619	68	0
2	B	1559	0	1477	36	0
2	D	1556	0	1479	23	0
3	E	28	0	25	0	0
4	F	39	0	34	0	0
5	A	1	0	0	0	0
5	C	1	0	0	0	0
6	A	28	0	26	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	B	14	0	13	0	0
6	C	56	0	52	1	0
All	All	13009	0	12374	199	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

All (199) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:490:PRO:HA	1:C:612:PRO:HG2	1.65	0.79
1:C:116:LEU:HD21	1:C:187:LYS:HE2	1.66	0.78
2:B:359:SER:HA	2:B:524:VAL:HG22	1.69	0.74
2:B:373:PRO:HG2	2:B:437:ASN:HB3	1.72	0.71
2:D:373:PRO:HG2	2:D:437:ASN:HB3	1.73	0.70
2:B:393:THR:HA	2:B:522:ALA:HA	1.71	0.70
1:C:104:GLY:O	1:C:106:SER:N	2.24	0.70
1:C:489:GLU:HG3	1:C:613:TYR:HE1	1.56	0.70
1:A:157:ASP:OD1	1:A:158:TYR:N	2.29	0.66
1:A:88:ILE:HG22	1:A:94:LYS:HG3	1.75	0.66
1:C:500:PRO:HB2	1:C:506:VAL:HG11	1.78	0.66
1:C:457:GLU:HG2	1:C:513:ILE:HB	1.78	0.64
1:C:261:CYS:HB2	1:C:488:VAL:HB	1.80	0.64
2:D:359:SER:HA	2:D:524:VAL:HG22	1.80	0.63
2:B:347:PHE:CE1	2:B:509:ARG:HD3	2.34	0.62
1:C:489:GLU:HG3	1:C:613:TYR:CE1	2.33	0.62
2:B:341:VAL:HG11	2:B:397:ALA:HB1	1.81	0.61
1:A:53:ASN:O	1:A:55:THR:HG23	2.02	0.60
2:B:358:ILE:HB	2:B:395:VAL:HB	1.82	0.60
2:D:393:THR:HA	2:D:522:ALA:HA	1.84	0.60
1:A:133:CYS:HA	1:A:141:CYS:HA	1.83	0.59
1:A:294:THR:HG23	1:A:365:THR:HA	1.84	0.59
1:A:457:GLU:HG2	1:A:513:ILE:HB	1.83	0.59
1:C:177:ARG:NH2	1:C:470:LYS:O	2.35	0.59
1:A:54:ILE:HD11	1:A:343:VAL:HG23	1.84	0.58
1:C:419:LYS:HE2	1:C:428:PHE:HB3	1.85	0.58
1:C:294:THR:HG23	1:C:365:THR:HA	1.85	0.58
1:A:524:GLN:HB3	1:A:574:VAL:HG11	1.85	0.58
1:C:157:ASP:OD1	1:C:158:TYR:N	2.37	0.57
2:B:347:PHE:CD2	2:B:399:SER:HB2	2.40	0.57
2:B:437:ASN:ND2	2:B:506:GLN:OE1	2.32	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:416:LYS:HD2	1:A:543:ASP:HB3	1.87	0.56
1:C:109:SER:O	1:C:112:LYS:N	2.37	0.55
1:A:527:GLU:HG3	1:A:539:LEU:HD22	1.89	0.55
1:C:271:TRP:NE1	1:C:502:SER:O	2.30	0.55
1:C:460:ARG:NH2	1:C:510:TYR:O	2.38	0.55
1:C:21:ILE:HD11	1:C:83:TYR:HA	1.88	0.55
2:D:362:VAL:HG23	2:D:526:GLY:HA3	1.88	0.54
2:D:388:ASN:HB3	2:D:527:PRO:HA	1.90	0.54
2:B:461:LEU:HG	2:B:465:GLU:HB3	1.89	0.54
1:A:104:GLY:O	1:A:107:VAL:HG12	2.07	0.54
1:C:233:ILE:HD13	1:C:450:LEU:HD13	1.91	0.53
2:D:452:ARG:HH21	2:D:492:LEU:HD12	1.72	0.53
1:C:492:PRO:HD3	1:C:613:TYR:CD2	2.44	0.52
1:A:144:LEU:HB2	1:A:168:TRP:CZ3	2.45	0.52
1:A:293:VAL:HG11	1:A:418:LEU:HD22	1.92	0.52
1:A:499:ASP:O	1:A:502:SER:OG	2.22	0.52
1:C:161:ARG:NE	1:C:265:HIS:O	2.42	0.52
1:C:245:ARG:NH2	1:C:603:PHE:O	2.42	0.52
2:D:447:GLY:HA2	2:D:498:ARG:HG2	1.92	0.52
2:B:379:CYS:HB2	2:B:384:PRO:HD3	1.92	0.52
1:A:53:ASN:OD1	1:A:340:GLN:HG3	2.09	0.52
2:D:358:ILE:HB	2:D:395:VAL:HB	1.92	0.52
2:B:457:ARG:HD2	2:B:458:LYS:H	1.76	0.51
1:A:180:TYR:HA	1:A:183:TYR:HB3	1.92	0.51
1:C:378:HIS:HE1	1:C:402:GLU:HA	1.75	0.51
1:A:482:ARG:HD3	1:A:608:THR:O	2.11	0.51
2:B:355:ARG:HE	2:B:396:TYR:HB3	1.75	0.51
1:C:85:LEU:HD21	1:C:98:GLN:HB2	1.92	0.51
1:A:440:LEU:HD23	1:A:444:LEU:HG	1.92	0.51
1:A:119:ILE:HG23	1:A:179:LEU:HD22	1.92	0.51
2:B:490:PHE:CE2	2:B:492:LEU:HB2	2.45	0.51
1:A:168:TRP:CD1	1:A:502:SER:HB2	2.46	0.51
1:A:269:ASP:OD1	1:A:272:GLY:N	2.36	0.50
1:A:351:LEU:HD22	1:A:355:ASP:OD2	2.11	0.50
1:C:455:MET:CE	1:C:481:LYS:HG2	2.41	0.50
1:A:284:PRO:HB2	1:A:285:PHE:CD2	2.47	0.50
1:C:180:TYR:HA	1:C:183:TYR:HB3	1.94	0.50
1:A:362:THR:HG23	1:A:368:ASP:HB3	1.92	0.49
1:C:396:ALA:HB1	1:C:566:TRP:HA	1.94	0.49
1:A:232:GLU:HB2	1:A:581:VAL:HG11	1.94	0.49
1:C:356:PHE:HB3	1:C:379:ILE:HD12	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:457:GLU:HG3	1:C:461:TRP:CE2	2.48	0.49
2:D:347:PHE:CE2	2:D:509:ARG:HB3	2.47	0.49
1:A:25:ALA:HB1	1:A:97:LEU:HD11	1.95	0.48
1:C:524:GLN:HB3	1:C:574:VAL:HG11	1.94	0.48
1:A:168:TRP:CZ3	1:A:172:VAL:HG21	2.48	0.48
1:A:500:PRO:HB2	1:A:506:VAL:HG11	1.96	0.48
1:A:446:ILE:O	1:A:449:THR:HG22	2.14	0.48
1:C:31:LYS:HE3	2:D:489:TYR:HB3	1.96	0.48
2:B:437:ASN:HB2	2:B:508:TYR:CZ	2.48	0.47
1:C:20:THR:HG23	1:C:23:GLU:H	1.79	0.47
2:D:335:LEU:HD23	2:D:362:VAL:HG13	1.95	0.47
2:D:428:ASP:N	2:D:428:ASP:OD1	2.47	0.47
1:A:21:ILE:HD11	1:A:83:TYR:HA	1.96	0.47
1:A:169:ARG:HH22	1:A:271:TRP:HA	1.78	0.47
1:C:538:PRO:HD2	1:C:541:LYS:HD3	1.96	0.47
1:A:243:TYR:CE2	1:A:440:LEU:HD11	2.49	0.47
1:A:541:LYS:HE2	1:A:541:LYS:HB3	1.76	0.47
1:C:174:LYS:HA	1:C:496:THR:O	2.15	0.47
1:C:189:GLU:HG2	1:C:192:ARG:HH12	1.80	0.47
2:B:393:THR:HG21	2:B:518:LEU:HD12	1.96	0.47
2:D:454:ARG:HD3	2:D:457:ARG:HG3	1.97	0.47
1:A:20:THR:HG22	1:A:23:GLU:CD	2.36	0.46
1:A:450:LEU:HB2	1:A:451:PRO:HD3	1.98	0.46
2:B:444:LYS:HB3	2:B:444:LYS:HE2	1.83	0.46
1:A:594:TRP:CZ2	1:A:598:GLN:HG3	2.50	0.46
1:C:75:GLU:O	1:C:79:LEU:HG	2.16	0.46
1:A:284:PRO:HD3	1:A:440:LEU:HD13	1.98	0.46
1:A:233:ILE:HD13	1:A:450:LEU:HD13	1.97	0.46
1:A:499:ASP:N	1:A:499:ASP:OD1	2.49	0.46
1:C:107:VAL:HG21	1:C:193:ALA:HB1	1.97	0.46
1:C:288:LYS:HG3	1:C:433:GLU:HB2	1.98	0.46
1:A:75:GLU:O	1:A:79:LEU:HD12	2.16	0.46
1:C:116:LEU:HB2	1:C:186:LEU:HD13	1.98	0.45
2:D:431:GLY:HA2	2:D:515:PHE:CD2	2.51	0.45
1:A:227:GLU:HG2	1:A:454:TYR:OH	2.16	0.45
2:B:445:VAL:HG22	2:B:499:PRO:HG3	1.99	0.45
2:B:502:GLY:O	2:B:506:GLN:HG3	2.17	0.45
1:A:476:LYS:HE2	1:A:476:LYS:HB2	1.76	0.45
1:A:381:TYR:CE1	1:A:558:LEU:HA	2.51	0.45
2:B:379:CYS:SG	2:B:384:PRO:HB3	2.56	0.45
1:C:25:ALA:HB1	1:C:97:LEU:HD11	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:181:GLU:HA	1:C:473:TRP:CH2	2.52	0.45
1:A:144:LEU:HB2	1:A:168:TRP:CH2	2.51	0.45
2:B:457:ARG:HD2	2:B:458:LYS:N	2.32	0.45
2:D:365:TYR:HB2	2:D:388:ASN:OD1	2.17	0.45
1:A:217:TYR:CE1	1:A:221:GLN:HG2	2.52	0.45
1:A:554:LEU:O	1:A:558:LEU:HG	2.17	0.45
2:B:342:PHE:CZ	2:B:511:VAL:HG11	2.52	0.45
1:C:346:PRO:HB3	1:C:360:MET:HG3	1.98	0.45
1:A:233:ILE:HG13	1:A:581:VAL:HG21	1.99	0.45
1:A:517:THR:HG22	1:A:579:MET:SD	2.56	0.45
1:A:245:ARG:NH2	1:A:603:PHE:O	2.50	0.45
2:B:447:GLY:HA2	2:B:498:ARG:HG2	1.99	0.45
1:C:125:THR:O	1:C:129:THR:OG1	2.24	0.44
1:A:248:LEU:HD12	1:A:262:LEU:HD22	1.98	0.44
1:C:247:LYS:HB2	1:C:282:THR:HG22	1.99	0.44
1:A:489:GLU:OE1	1:A:489:GLU:N	2.48	0.44
1:C:456:LEU:HD12	1:C:477:TRP:HH2	1.83	0.44
1:A:145:GLU:HA	1:A:146:PRO:HA	1.87	0.44
1:A:450:LEU:HD21	1:A:519:THR:HG21	2.00	0.44
2:B:395:VAL:HG22	2:B:515:PHE:HD1	1.82	0.44
2:D:497:PHE:CD2	2:D:507:PRO:HB3	2.53	0.44
1:C:340:GLN:HB2	6:C:902:NAG:H82	2.00	0.44
1:C:469:PRO:HB2	1:C:471:ASP:OD1	2.18	0.44
1:A:168:TRP:NE1	1:A:502:SER:HB2	2.33	0.44
1:C:555:PHE:O	1:C:559:ARG:HG2	2.18	0.43
1:A:85:LEU:HD21	1:A:98:GLN:HB2	1.99	0.43
2:B:412:PRO:HG3	2:B:429:PHE:HB3	1.99	0.43
2:B:374:PHE:O	2:B:436:TRP:HA	2.19	0.43
2:B:422:ASN:OD1	2:B:454:ARG:N	2.51	0.43
1:A:152:MET:O	1:A:161:ARG:NH1	2.49	0.43
2:D:412:PRO:HG3	2:D:429:PHE:HB3	2.01	0.43
1:A:53:ASN:O	1:A:54:ILE:C	2.56	0.43
1:A:21:ILE:HD11	1:A:82:MET:O	2.18	0.43
1:C:131:LYS:HB3	1:C:143:LEU:HD23	2.00	0.43
1:C:162:LEU:HD11	1:C:491:VAL:HG23	2.01	0.43
2:D:372:ALA:CB	2:D:436:TRP:HB2	2.49	0.43
1:C:284:PRO:HD3	1:C:440:LEU:HG	2.01	0.43
1:C:82:MET:SD	2:D:486:VAL:HG11	2.59	0.42
1:C:151:ILE:O	1:C:155:SER:HB3	2.19	0.42
1:A:30:ASP:O	1:A:34:HIS:ND1	2.39	0.42
1:A:580:ASN:OD1	1:A:581:VAL:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:362:VAL:HG23	2:B:526:GLY:HA3	2.02	0.42
1:C:500:PRO:O	1:C:506:VAL:HB	2.19	0.42
2:D:450:ASN:HD22	2:D:450:ASN:HA	1.55	0.42
1:A:453:THR:HG23	1:A:512:PHE:CD2	2.54	0.42
2:B:347:PHE:HD2	2:B:399:SER:HB2	1.83	0.42
1:C:178:PRO:HA	1:C:181:GLU:OE1	2.19	0.42
1:A:490:PRO:HA	1:A:612:PRO:HG2	2.01	0.42
1:A:492:PRO:HD3	1:A:613:TYR:CG	2.54	0.42
1:C:158:TYR:O	1:C:162:LEU:N	2.49	0.42
1:A:455:MET:HE3	1:A:480:MET:HB2	2.01	0.42
1:C:161:ARG:HH21	1:C:268:GLY:H	1.68	0.42
1:A:177:ARG:HH22	1:A:495:GLU:HB3	1.85	0.42
1:A:402:GLU:HB3	1:A:518:ARG:HG3	2.00	0.42
1:C:176:LEU:HD13	1:C:501:ALA:HB1	2.02	0.42
2:B:390:LEU:HD23	2:B:390:LEU:HA	1.85	0.42
1:C:381:TYR:CE1	1:C:558:LEU:HA	2.55	0.42
2:D:374:PHE:O	2:D:436:TRP:HA	2.20	0.42
2:B:490:PHE:HE2	2:B:492:LEU:HB2	1.84	0.41
1:C:279:TYR:OH	1:C:437:ASN:HB3	2.20	0.41
1:A:265:HIS:ND1	1:A:490:PRO:HG3	2.36	0.41
2:B:431:GLY:HA2	2:B:515:PHE:CD2	2.56	0.41
1:A:165:TRP:CH2	1:A:490:PRO:HD2	2.55	0.41
1:A:165:TRP:HA	1:A:270:MET:SD	2.60	0.41
1:A:459:TRP:CG	1:A:477:TRP:HE3	2.38	0.41
1:A:396:ALA:HB1	1:A:566:TRP:HA	2.02	0.41
2:B:382:VAL:HG22	2:B:383:SER:H	1.85	0.41
2:B:455:LEU:HG	2:B:456:PHE:CE1	2.56	0.41
1:C:105:SER:H	1:C:190:MET:CG	2.33	0.41
1:C:455:MET:HE2	1:C:481:LYS:HG2	2.03	0.41
1:C:419:LYS:NZ	1:C:428:PHE:O	2.34	0.41
2:D:379:CYS:HB2	2:D:384:PRO:HD3	2.02	0.41
2:B:406:GLU:HB3	2:B:418:ILE:HG13	2.02	0.41
2:B:472:ILE:HD13	2:B:472:ILE:HA	1.89	0.41
1:C:187:LYS:HD2	1:C:199:TYR:CZ	2.55	0.40
1:C:535:HIS:CD2	1:C:542:CYS:HB2	2.55	0.40
1:C:85:LEU:HD12	1:C:85:LEU:HA	1.95	0.40
1:C:204:ARG:CZ	1:C:223:ILE:HD11	2.51	0.40
1:C:303:ASP:OD1	1:C:303:ASP:N	2.53	0.40
1:C:48:TRP:CZ3	1:C:359:LEU:HB2	2.57	0.40
1:A:132:VAL:HG22	1:A:148:LEU:HD11	2.03	0.40
1:A:497:TYR:HB3	1:A:499:ASP:OD1	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:392:PHE:HB3	2:B:516:GLU:O	2.22	0.40
2:D:403:ARG:HH12	2:D:405:ASN:HD22	1.70	0.40
1:A:171:GLU:O	1:A:175:GLN:HG3	2.22	0.40
1:C:374:HIS:HD1	1:C:405:GLY:C	2.25	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	595/805 (74%)	576 (97%)	19 (3%)	0	100	100
1	C	595/805 (74%)	563 (95%)	31 (5%)	1 (0%)	47	78
2	B	194/247 (78%)	176 (91%)	18 (9%)	0	100	100
2	D	194/247 (78%)	185 (95%)	9 (5%)	0	100	100
All	All	1578/2104 (75%)	1500 (95%)	77 (5%)	1 (0%)	51	82

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	54	ILE

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles		
1	A	527/711 (74%)	521 (99%)	6 (1%)		73	86
1	C	525/711 (74%)	515 (98%)	10 (2%)		57	78
2	B	168/216 (78%)	164 (98%)	4 (2%)		49	74
2	D	168/216 (78%)	166 (99%)	2 (1%)		71	85
All	All	1388/1854 (75%)	1366 (98%)	22 (2%)		62	81

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	30	ASP
1	A	198	ASP
1	A	363	LYS
1	A	381	TYR
1	A	385	TYR
1	A	455	MET
2	B	343	ASN
2	B	355	ARG
2	B	377	PHE
2	B	386	LYS
1	C	19	SER
1	C	30	ASP
1	C	136	ASP
1	C	199	TYR
1	C	271	TRP
1	C	330	ASN
1	C	363	LYS
1	C	381	TYR
1	C	385	TYR
1	C	542	CYS
2	D	377	PHE
2	D	450	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	58	ASN
2	D	450	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

5 monosaccharides are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
3	NAG	E	1	3,1	14,14,15	0.31	0	17,19,21	0.79	1 (5%)
3	NAG	E	2	3	14,14,15	0.57	0	17,19,21	0.87	1 (5%)
4	NAG	F	1	4,1	14,14,15	0.29	0	17,19,21	0.44	0
4	NAG	F	2	4	14,14,15	0.24	0	17,19,21	0.42	0
4	BMA	F	3	4	11,11,12	0.80	0	15,15,17	0.79	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	E	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	E	2	3	-	2/6/23/26	0/1/1/1
4	NAG	F	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	F	2	4	-	0/6/23/26	0/1/1/1
4	BMA	F	3	4	-	1/2/19/22	0/1/1/1

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	E	1	NAG	O4-C4-C5	2.23	114.83	109.30
3	E	2	NAG	C1-C2-N2	2.22	114.28	110.49

There are no chirality outliers.

All (5) torsion outliers are listed below:

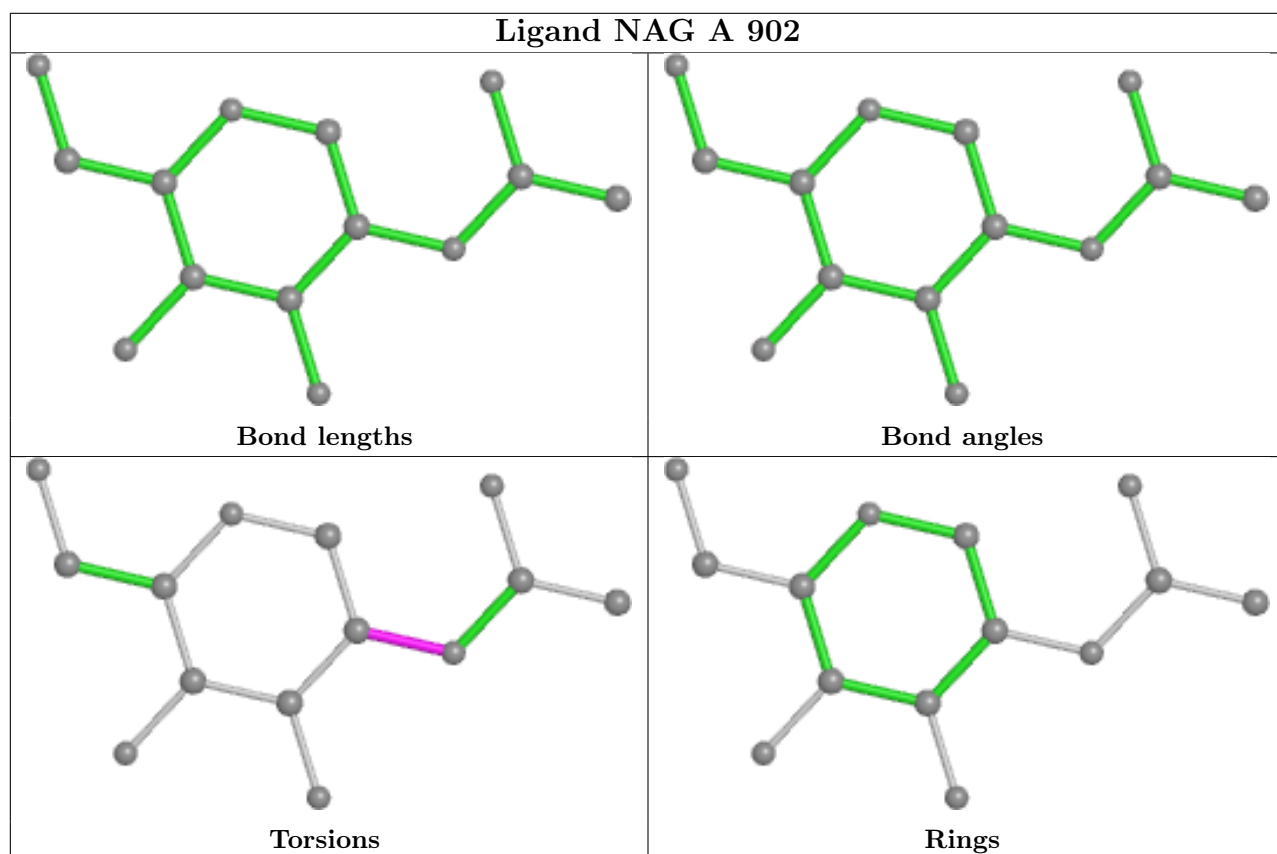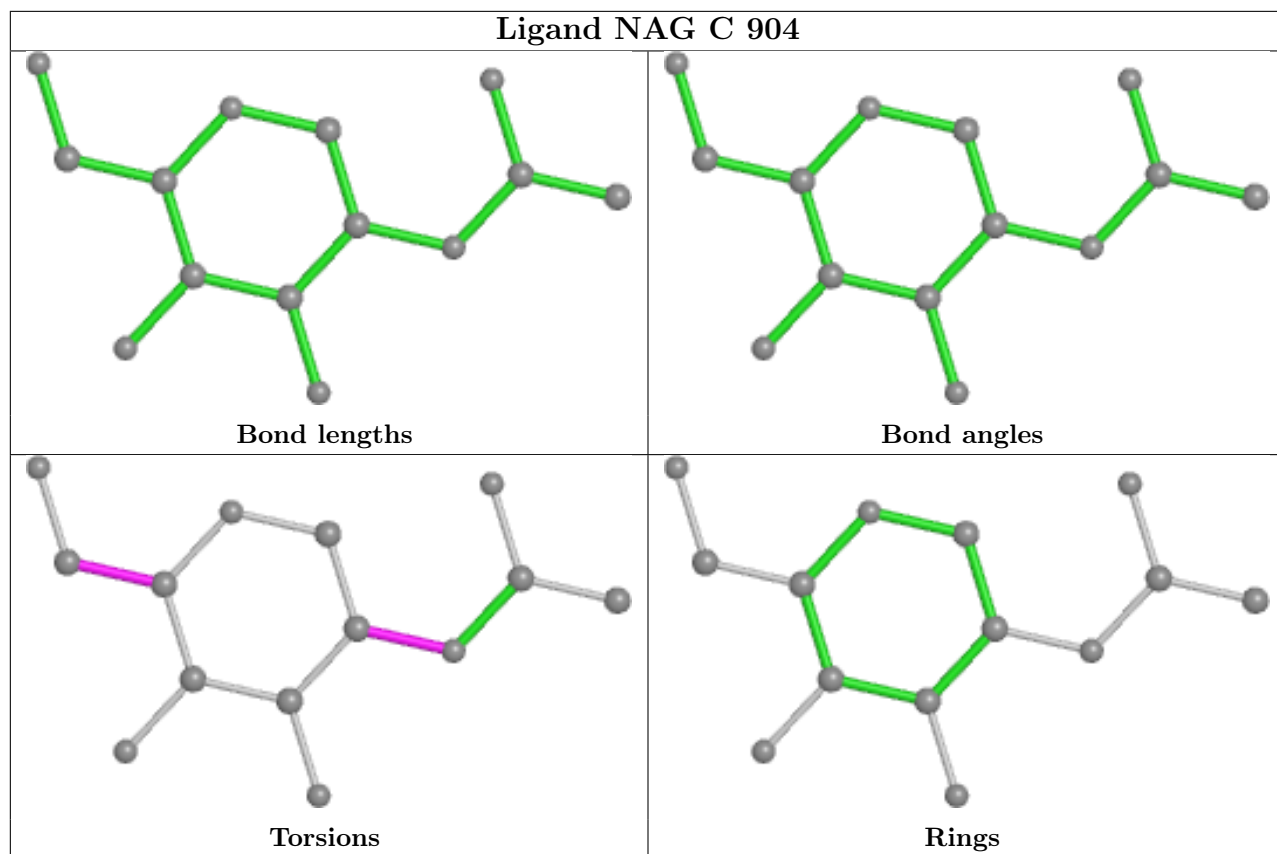| Mol	Chain	Res	Type	Atoms
4	F	3	BMA	O5-C5-C6-O6
4	F	1	NAG	C4-C5-C6-O6
3	E	2	NAG	O5-C5-C6-O6
4	F	1	NAG	O5-C5-C6-O6
3	E	2	NAG	C3-C2-N2-C7

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

Oligosaccharide Chain E

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain F

Bond lengths

Bond angles

Torsions

Rings
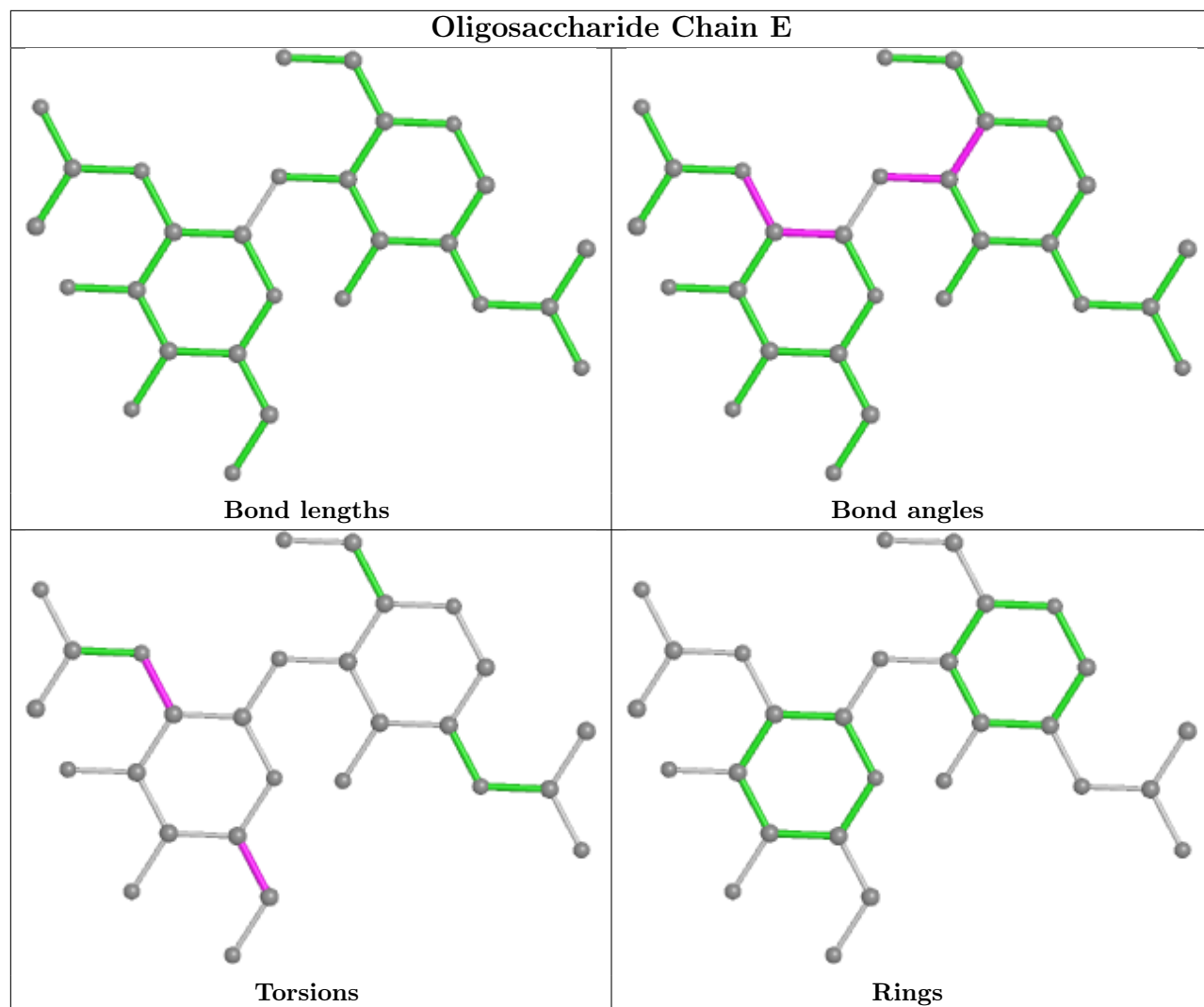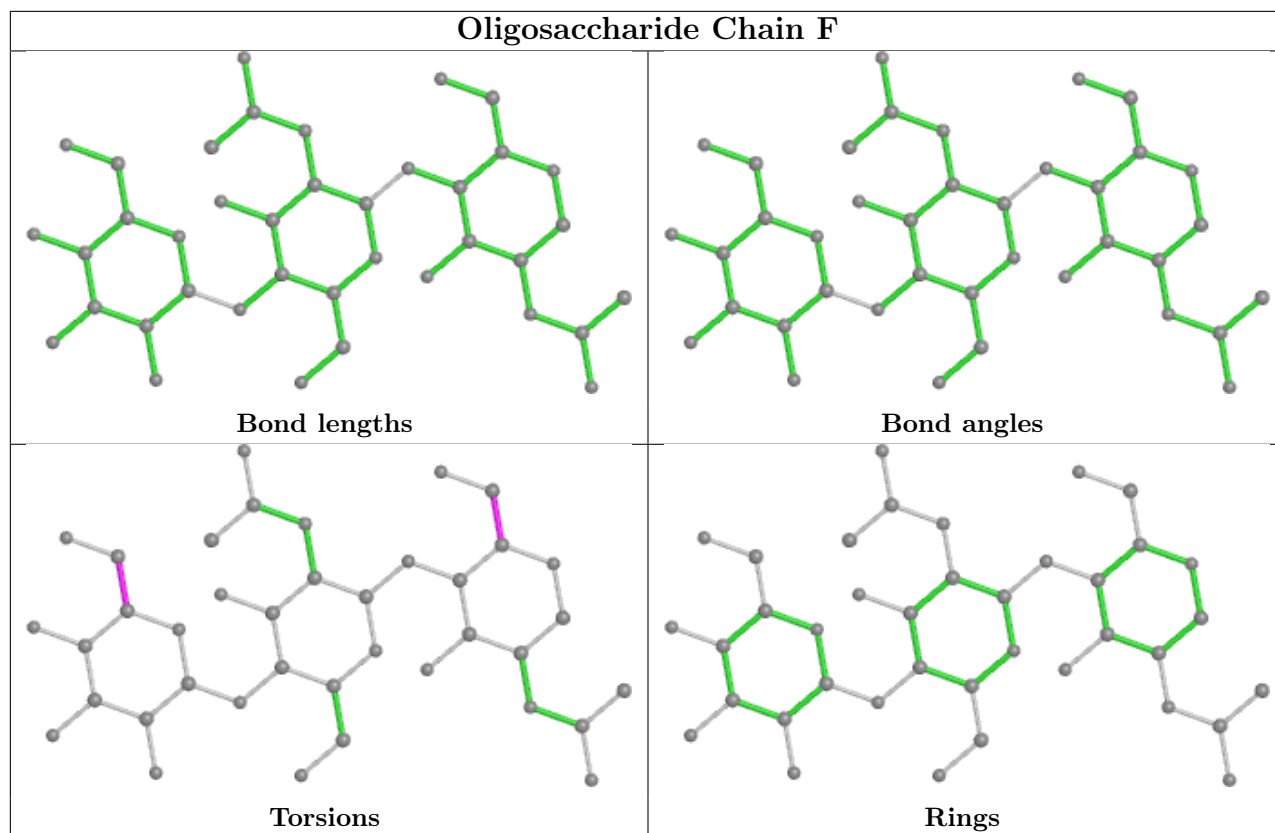
5.6 Ligand geometry (i)

Of 9 ligands modelled in this entry, 2 are monoatomic - leaving 7 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
6	NAG	A	903	1	14,14,15	0.45	0	17,19,21	0.44	0
6	NAG	C	905	1	14,14,15	0.46	0	17,19,21	0.76	0
6	NAG	C	902	1	14,14,15	0.56	0	17,19,21	0.63	0
6	NAG	C	903	1	14,14,15	0.40	0	17,19,21	0.41	0
6	NAG	B	601	2	14,14,15	0.25	0	17,19,21	0.38	0
6	NAG	C	904	1	14,14,15	0.32	0	17,19,21	0.67	0
6	NAG	A	902	1	14,14,15	0.38	0	17,19,21	0.42	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral

centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	A	903	1	-	4/6/23/26	0/1/1/1
6	NAG	C	905	1	-	2/6/23/26	0/1/1/1
6	NAG	C	902	1	-	2/6/23/26	0/1/1/1
6	NAG	C	903	1	-	0/6/23/26	0/1/1/1
6	NAG	B	601	2	-	2/6/23/26	0/1/1/1
6	NAG	C	904	1	-	4/6/23/26	0/1/1/1
6	NAG	A	902	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (16) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	903	NAG	O5-C5-C6-O6
6	C	902	NAG	C1-C2-N2-C7
6	C	904	NAG	O5-C5-C6-O6
6	A	903	NAG	C4-C5-C6-O6
6	A	903	NAG	C1-C2-N2-C7
6	A	902	NAG	C1-C2-N2-C7
6	C	904	NAG	C4-C5-C6-O6
6	B	601	NAG	C4-C5-C6-O6
6	B	601	NAG	O5-C5-C6-O6
6	C	905	NAG	C4-C5-C6-O6
6	C	905	NAG	O5-C5-C6-O6
6	A	902	NAG	C3-C2-N2-C7
6	A	903	NAG	C3-C2-N2-C7
6	C	902	NAG	C3-C2-N2-C7
6	C	904	NAG	C3-C2-N2-C7
6	C	904	NAG	C1-C2-N2-C7

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	C	902	NAG	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand NAG A 903

Bond lengths

Bond angles

Torsions

Rings

Ligand NAG C 905

Bond lengths

Bond angles

Torsions

Rings

Ligand NAG C 902

Bond lengths

Bond angles

Torsions

Rings

Ligand NAG C 903

Bond lengths

Bond angles

Torsions

Rings

Ligand NAG B 601

Bond lengths

Bond angles

Torsions

Rings

Ligand NAG C 904

Bond lengths

Bond angles

Torsions

Rings

Ligand NAG A 902

Bond lengths

Bond angles

Torsions

Rings
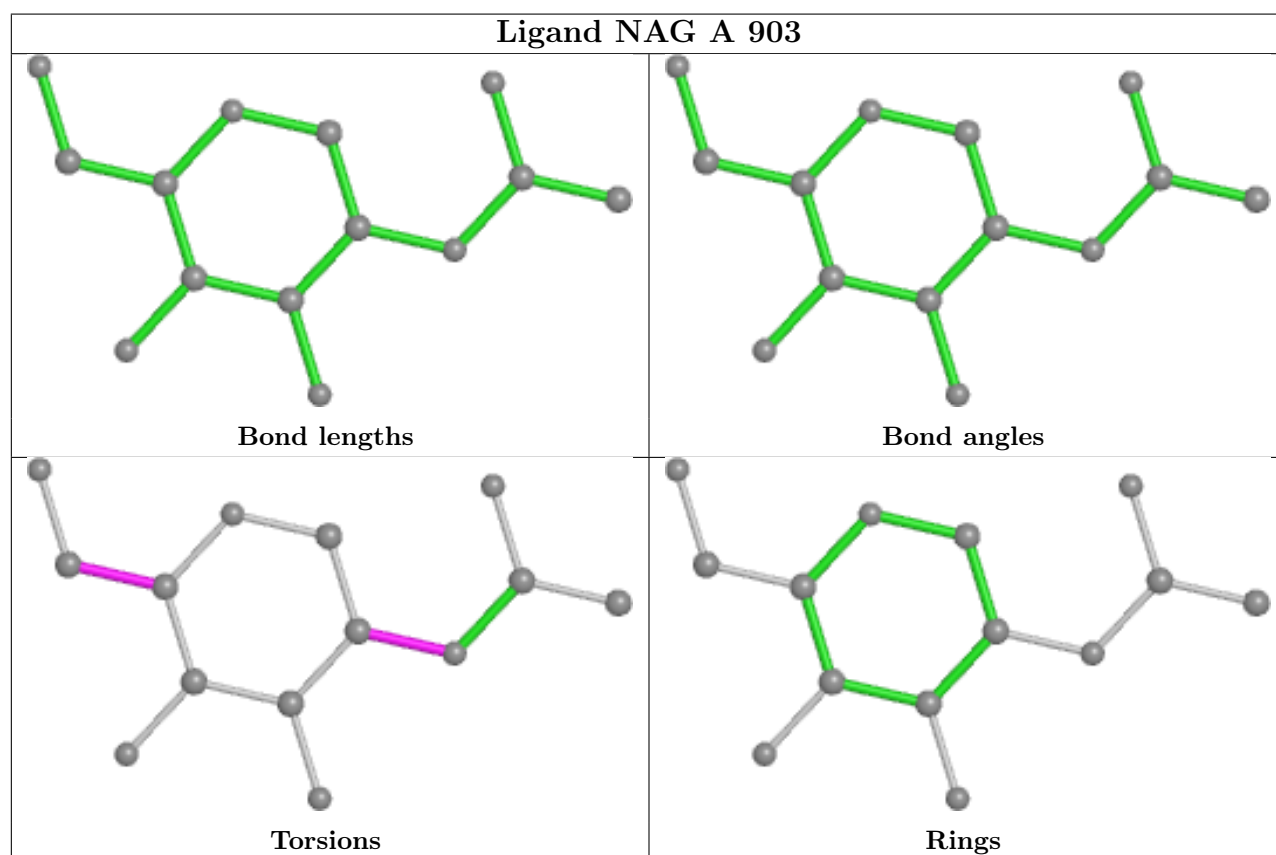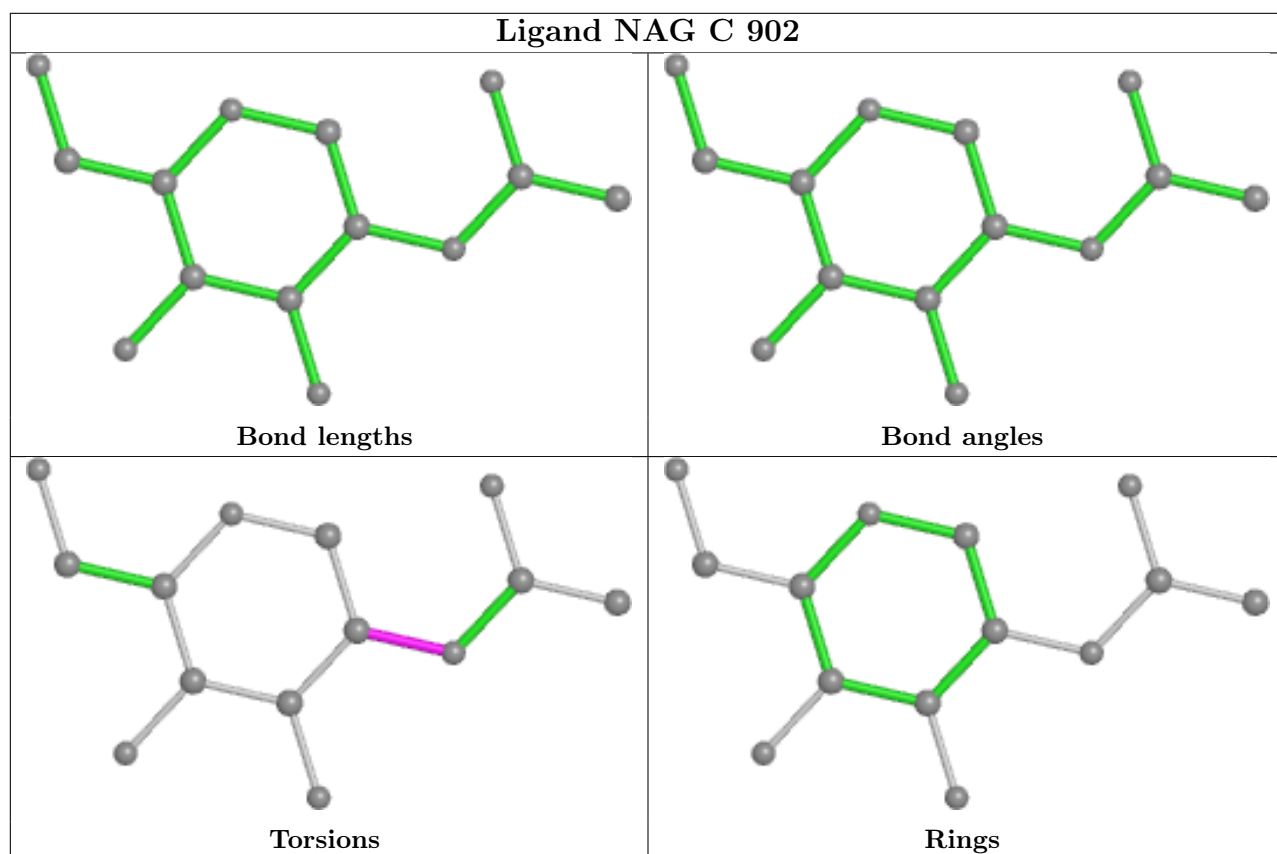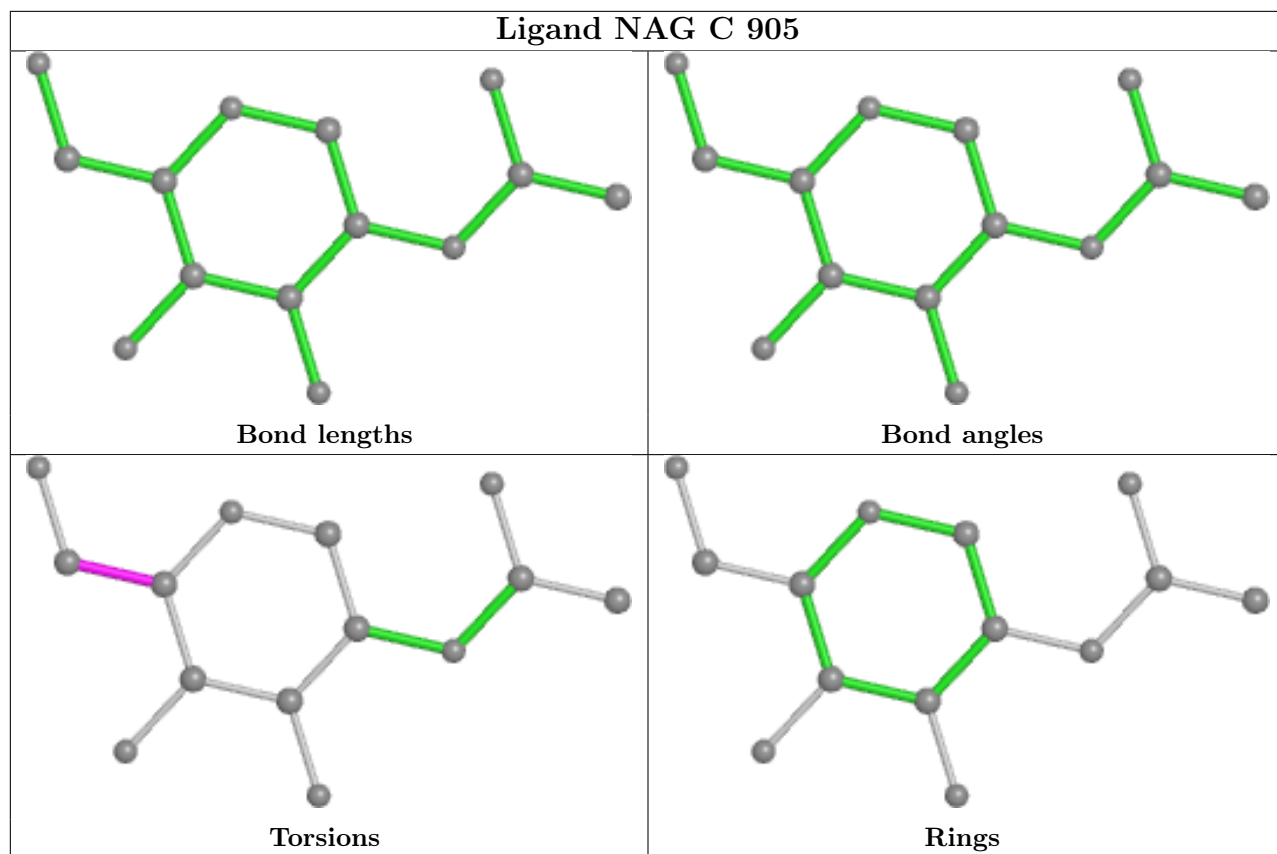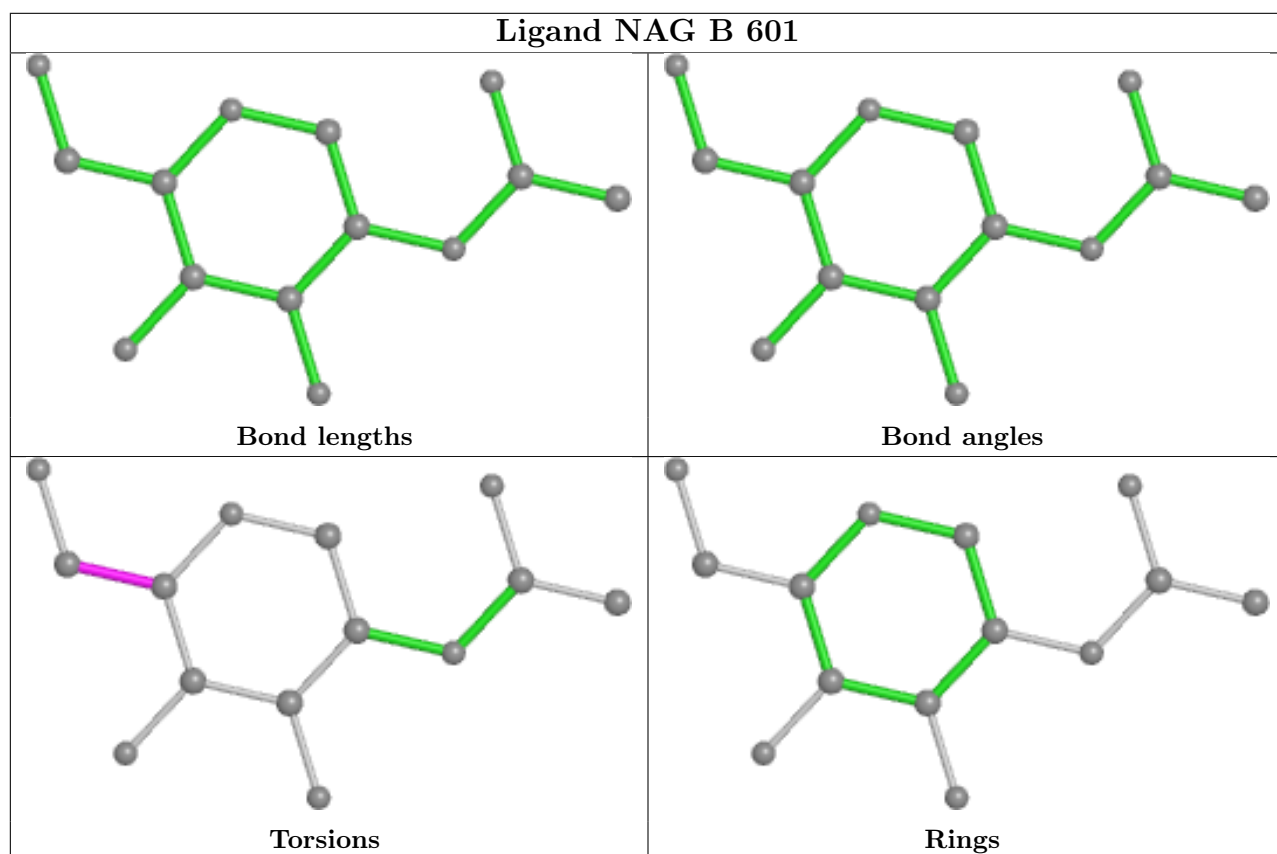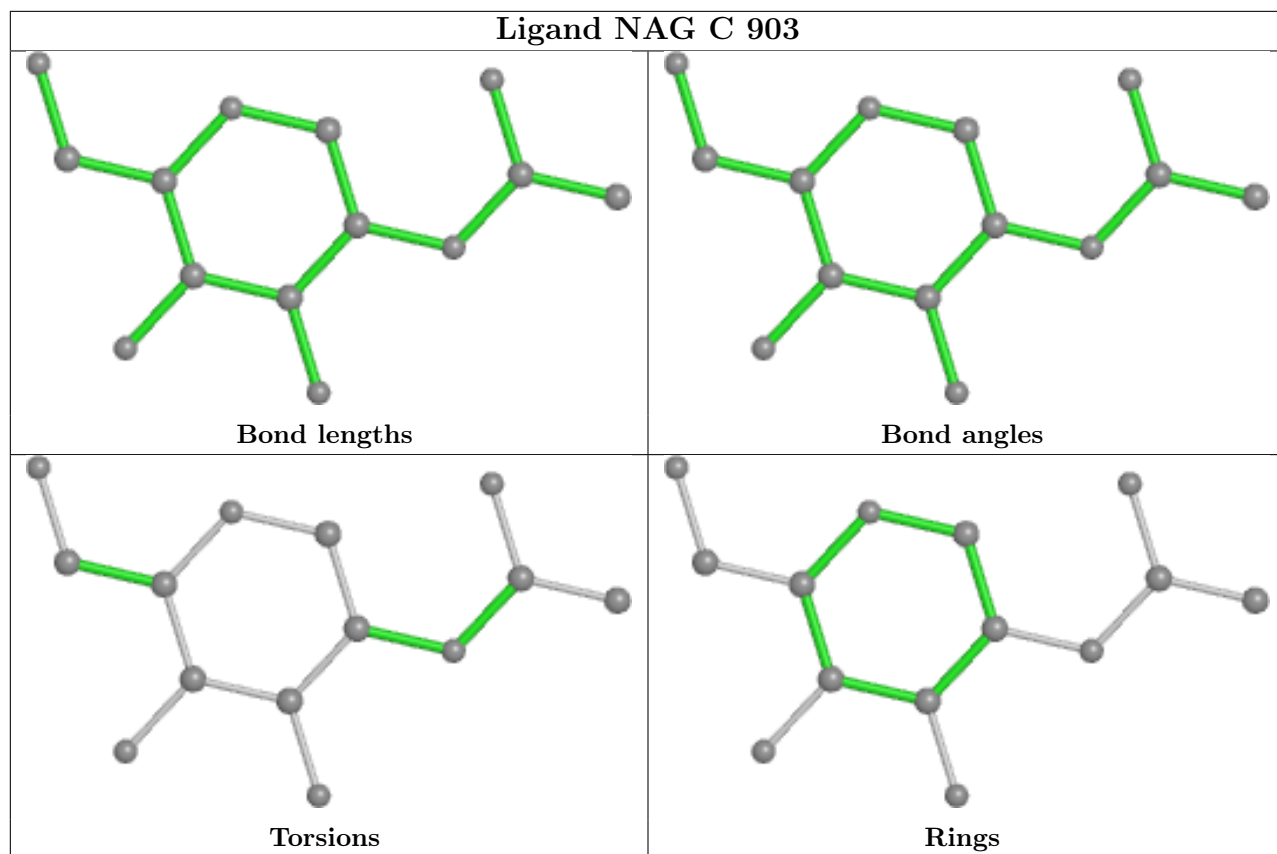
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å²)	Q<0.9
1	A	596/805 (74%)	-0.23	4 (0%)	87	87	24, 48, 101, 189	0
1	C	596/805 (74%)	0.01	27 (4%)	33	33	24, 54, 136, 236	0
2	B	195/247 (78%)	0.50	24 (12%)	4	5	40, 73, 181, 224	0
2	D	195/247 (78%)	0.55	27 (13%)	2	3	35, 66, 175, 222	0
All	All	1582/2104 (75%)	0.05	82 (5%)	27	27	24, 56, 148, 236	0

All (82) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	372	ALA	8.7
2	D	373	PRO	7.9
2	B	373	PRO	7.9
1	C	141	CYS	7.2
2	D	517	LEU	6.8
1	C	136	ASP	6.5
1	C	140	GLU	5.9
2	B	371	PHE	5.8
2	D	372	ALA	5.6
2	B	518	LEU	5.4
2	B	520	ALA	5.3
1	C	146	PRO	5.1
1	C	137	ASN	5.1
1	C	139	GLN	4.8
1	C	142	LEU	4.5
1	C	149	ASN	4.4
2	B	374	PHE	4.3
2	D	519	HIS	4.2
2	D	518	LEU	4.1
1	C	427	ASP	4.1
2	D	520	ALA	4.0

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Mol	Chain	Res	Type	RSRZ
2	D	522	ALA	4.0
2	D	516	GLU	3.9
2	D	335	LEU	3.9
2	D	394	ASN	3.9
2	D	371	PHE	3.8
1	C	110	GLU	3.8
1	C	145	GLU	3.7
2	D	369	TYR	3.7
1	C	144	LEU	3.7
2	B	519	HIS	3.5
1	C	135	PRO	3.5
2	B	333	THR	3.4
2	B	481	ASN	3.4
2	D	334	ASN	3.3
2	D	333	THR	3.3
2	D	374	PHE	3.3
1	C	134	ASN	3.2
1	C	498	CYS	3.1
2	D	370	ASN	3.1
2	D	392	PHE	3.1
1	C	143	LEU	3.1
2	D	527	PRO	3.0
1	C	129	THR	3.0
1	C	133	CYS	3.0
2	B	334	ASN	3.0
2	D	521	PRO	2.9
2	D	365	TYR	2.9
1	A	139	GLN	2.8
1	A	339	VAL	2.7
2	B	370	ASN	2.7
1	C	613	TYR	2.7
2	D	387	LEU	2.6
2	B	369	TYR	2.6
1	A	145	GLU	2.6
1	C	339	VAL	2.5
2	B	523	THR	2.5
2	B	391	CYS	2.5
1	C	117	ASN	2.4
1	C	108	LEU	2.4
1	C	86	GLN	2.4
2	B	521	PRO	2.4
2	B	516	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	153	ALA	2.3
2	B	393	THR	2.3
2	B	482	GLY	2.3
2	B	527	PRO	2.3
2	D	381	GLY	2.3
2	D	523	THR	2.3
1	C	113	SER	2.3
1	C	156	LEU	2.2
2	B	384	PRO	2.2
1	A	299	ASP	2.1
2	D	484	ALA	2.1
2	D	393	THR	2.1
2	B	335	LEU	2.1
2	D	524	VAL	2.1
2	B	525	CYS	2.1
2	B	426	PRO	2.1
1	C	157	ASP	2.1
2	D	515	PHE	2.1
2	B	415	THR	2.0

6.2   Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

6.3   Carbohydrates ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	BMA	F	3	11/12	0.70	0.35	104,108,115,117	0
3	NAG	E	2	14/15	0.81	0.39	88,97,105,106	0
3	NAG	E	1	14/15	0.89	0.18	52,58,64,74	0
4	NAG	F	2	14/15	0.90	0.41	112,118,127,130	0
4	NAG	F	1	14/15	0.90	0.23	61,76,84,89	0

The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.
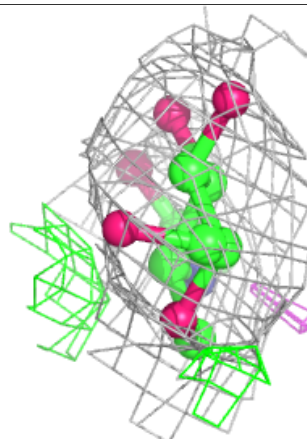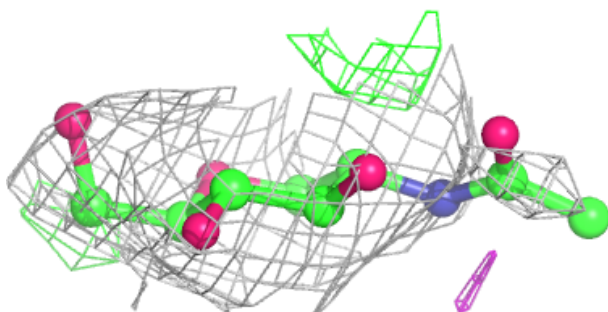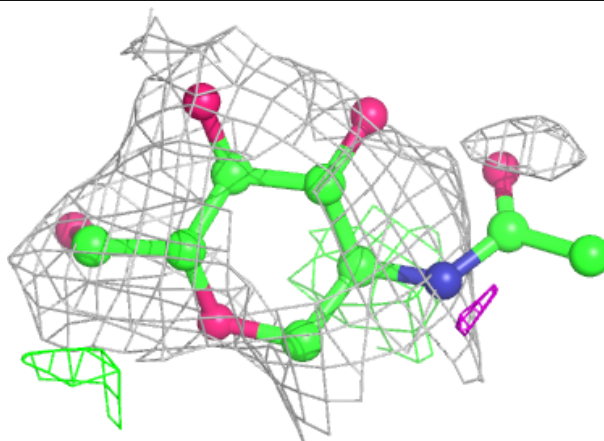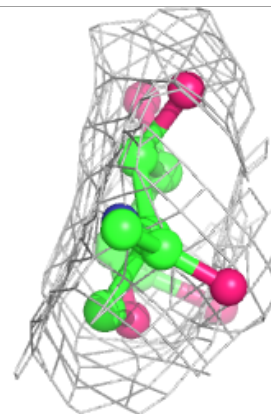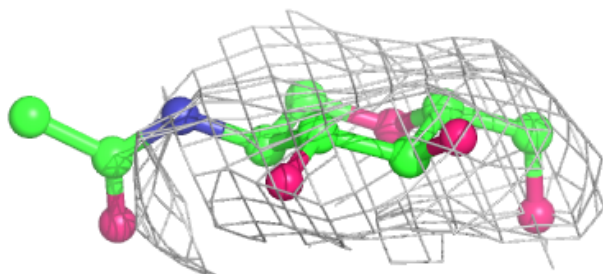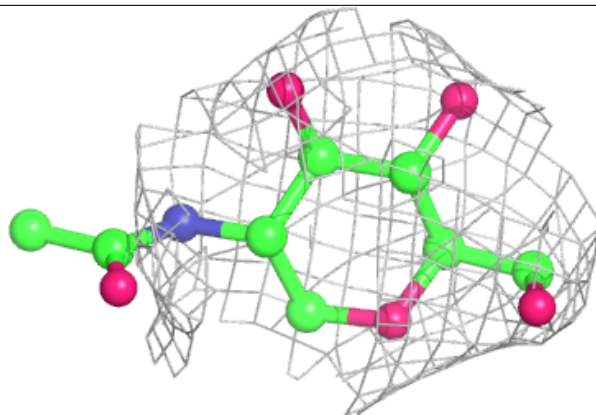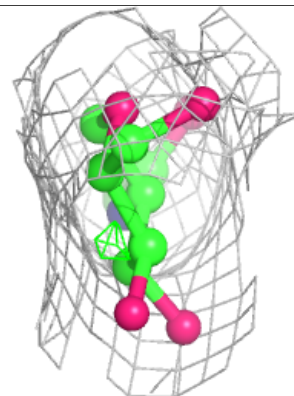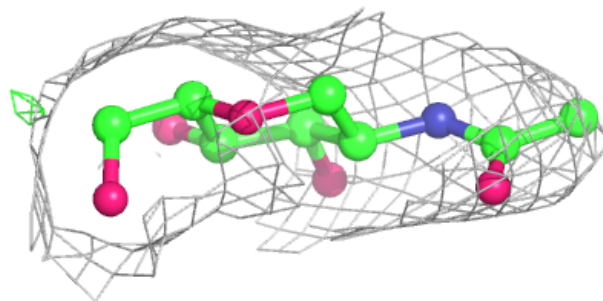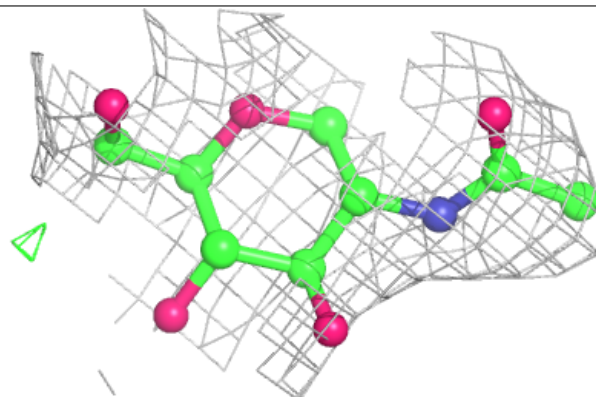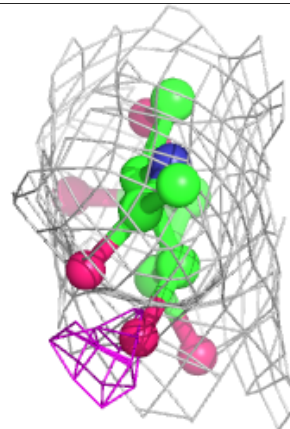
Electron density around Chain E:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
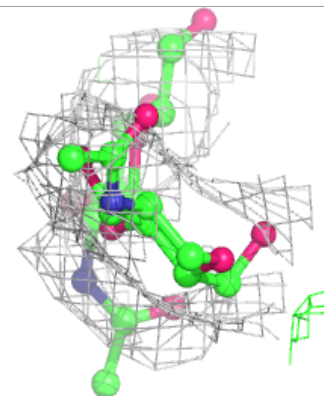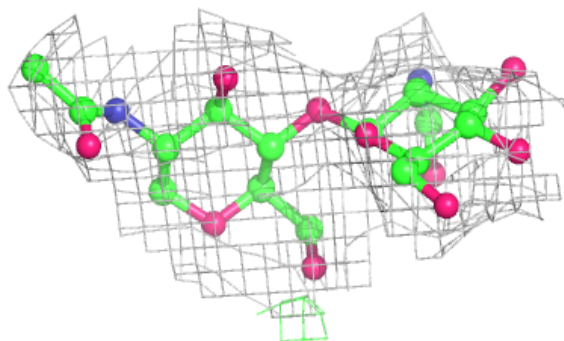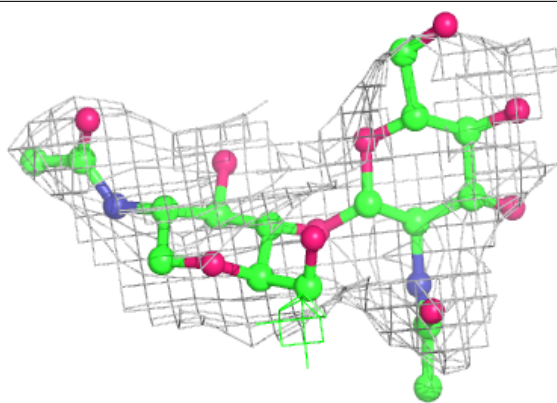
Electron density around Chain F:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
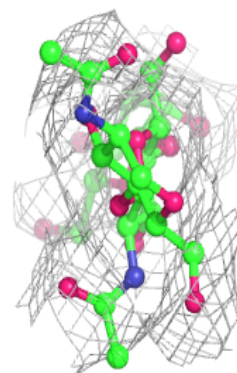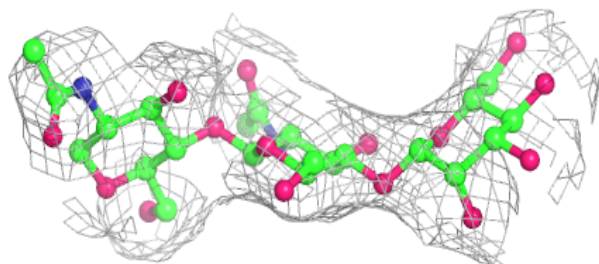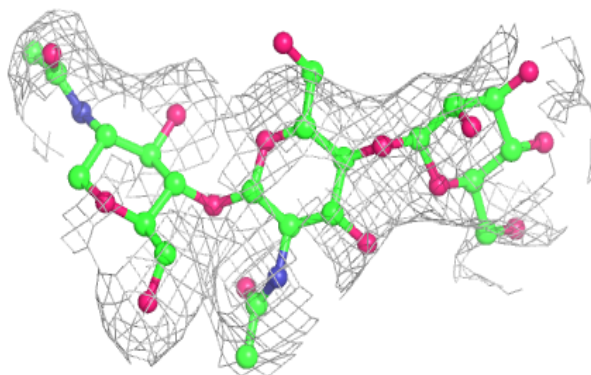
6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
6	NAG	B	601	14/15	0.72	0.48	143,151,154,155	0
6	NAG	A	903	14/15	0.74	0.40	108,121,130,134	0
6	NAG	C	902	14/15	0.74	0.33	119,123,126,127	0
6	NAG	C	903	14/15	0.75	0.35	87,101,106,107	0
6	NAG	C	905	14/15	0.82	0.24	62,80,95,110	0
6	NAG	A	902	14/15	0.83	0.31	83,88,97,104	0
6	NAG	C	904	14/15	0.85	0.26	71,78,85,91	0
5	ZN	A	901	1/1	0.98	0.08	40,40,40,40	0
5	ZN	C	901	1/1	0.99	0.11	36,36,36,36	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around NAG B 601:

$2\text{mF}_o\text{-DF}_c$ (at 0.7 rmsd) in gray
$\text{mF}_o\text{-DF}_c$ (at 3 rmsd) in purple (negative) and green (positive)
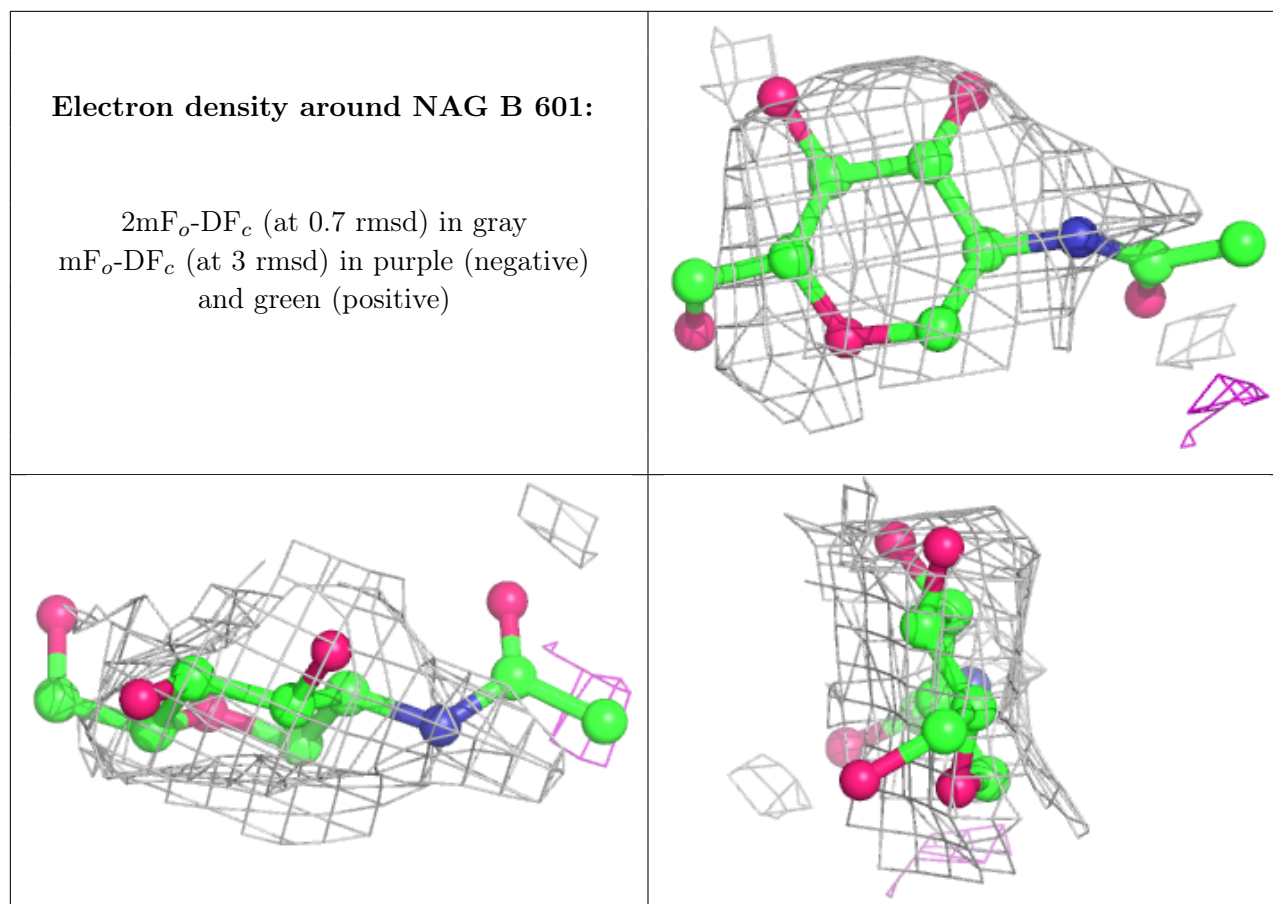
Electron density around NAG A 903:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
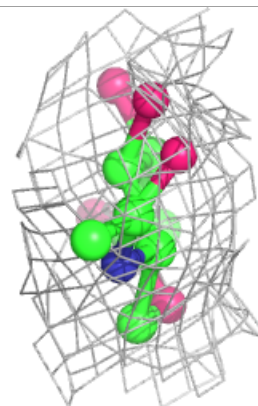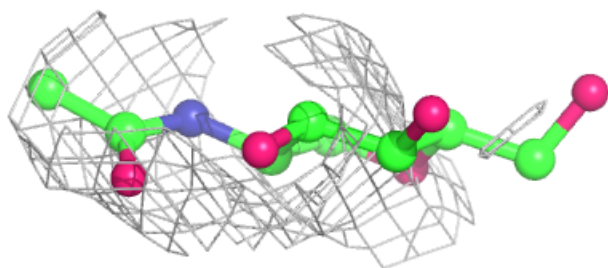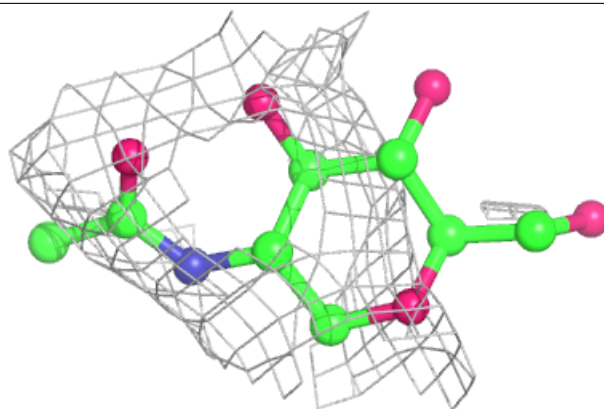
Electron density around NAG C 902:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around NAG C 903:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
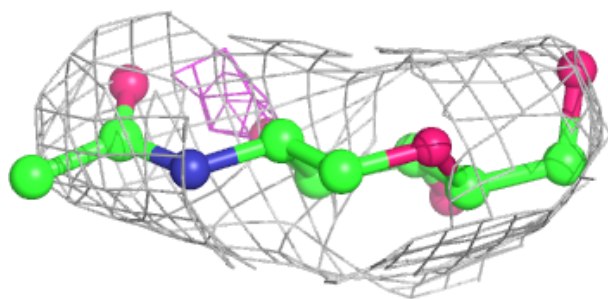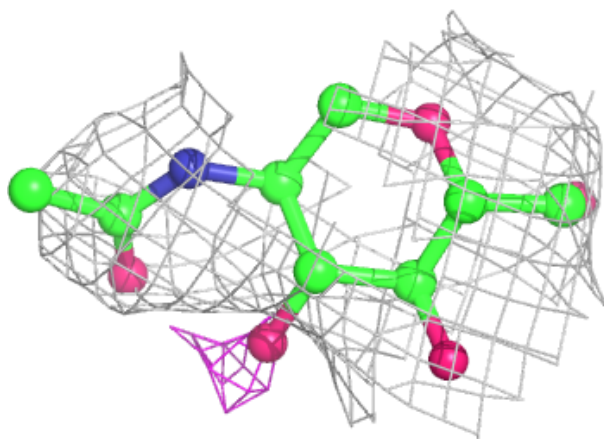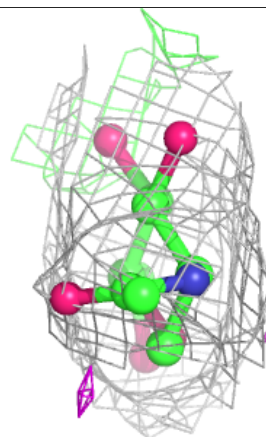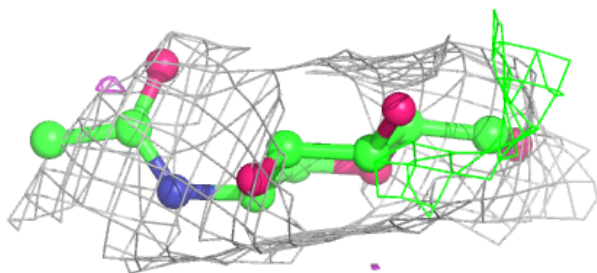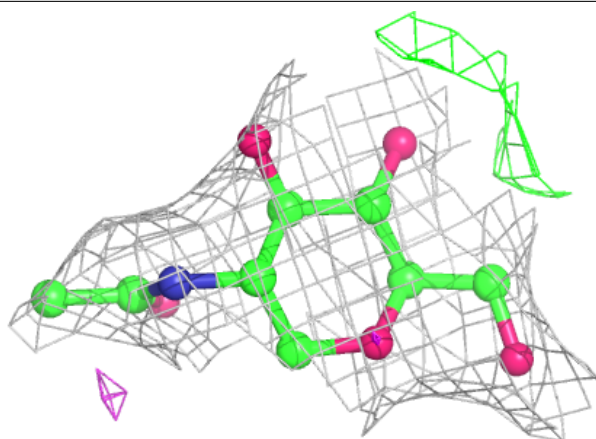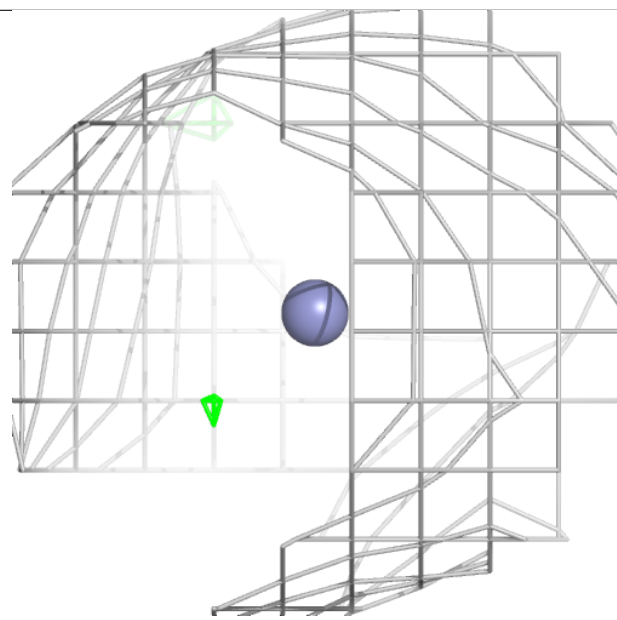mF_o-DF_c (at 3 rmsd) in purple (negative)
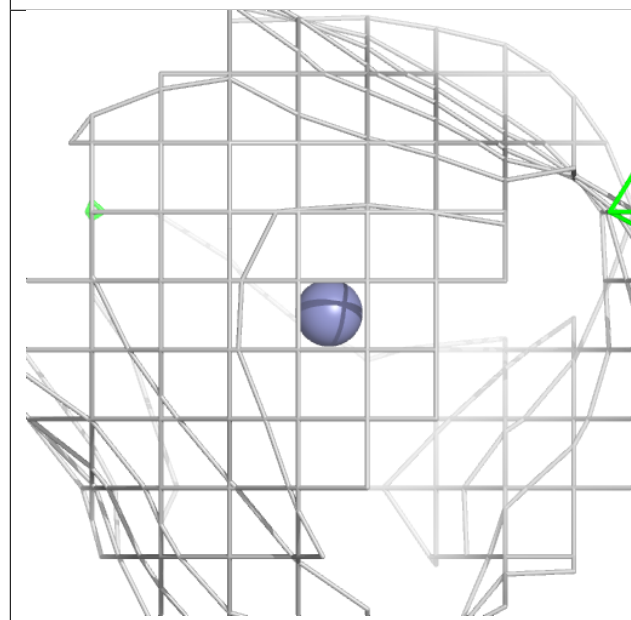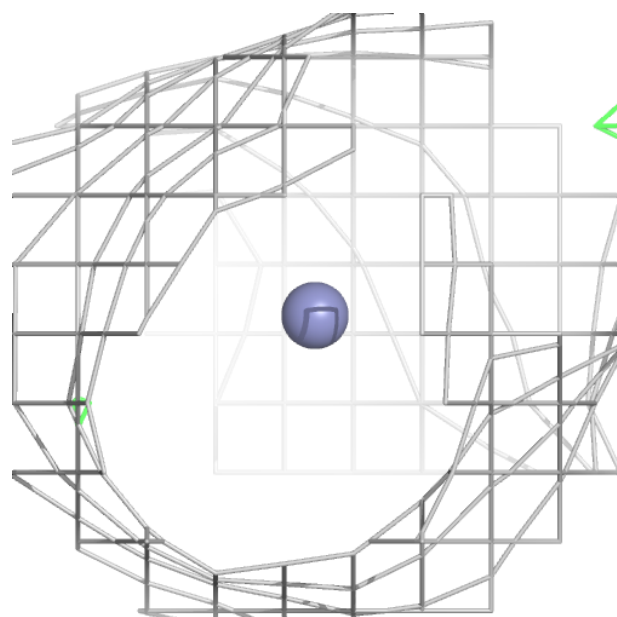and green (positive)

Electron density around NAG C 905:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around NAG A 902:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
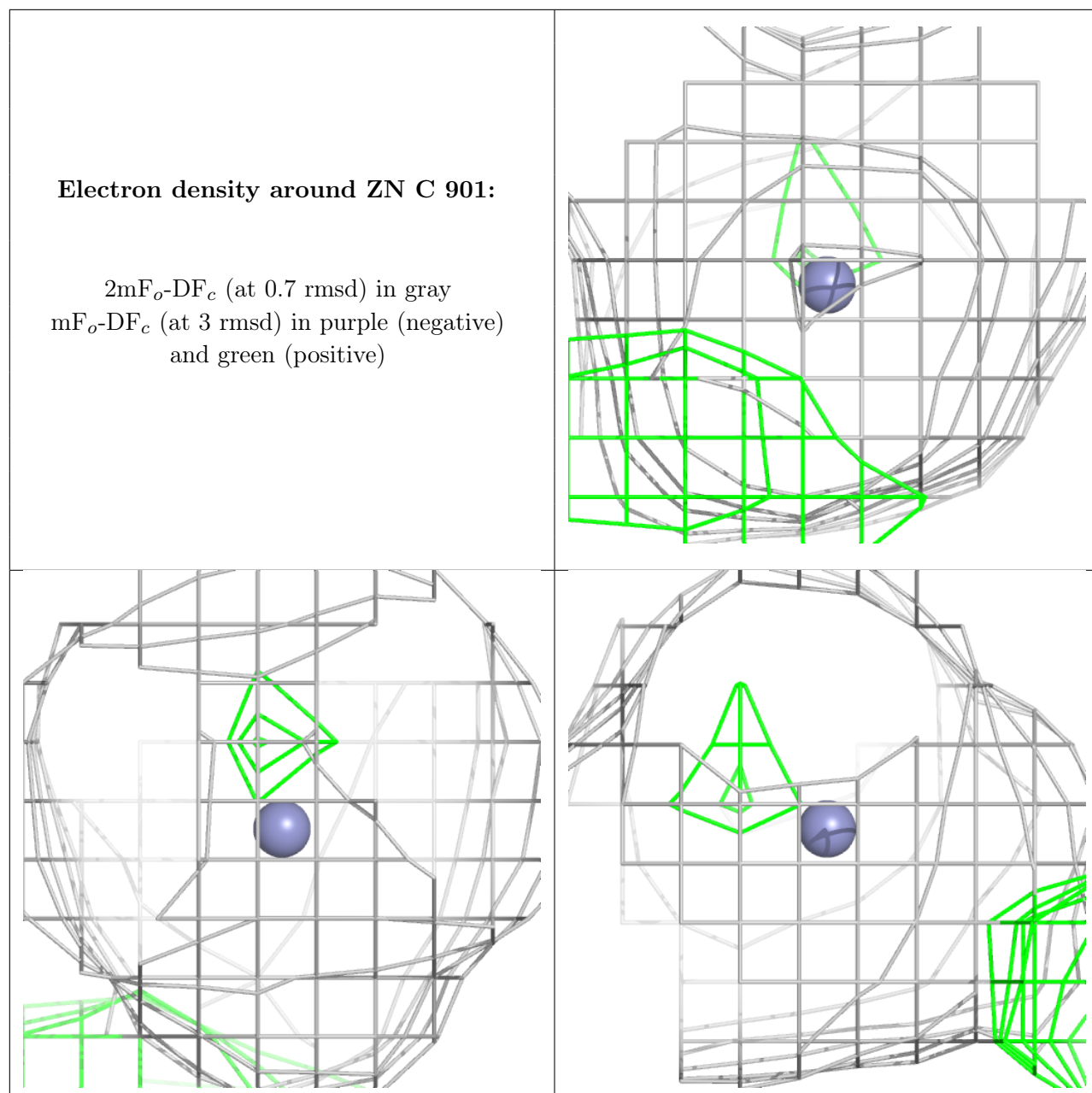and green (positive)

Electron density around NAG C 904:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around ZN A 901:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around ZN C 901:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

6.5 Other polymers ⓘ

There are no such residues in this entry.